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10/597,348	03/16/2007	Carlo Antonio Rossi	40943	9742
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EXAMINER SAVANI, AVINASH A				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/597,348

Applicant(s)

ROSSI ET AL.

Examiner

AVINASH SAVANI

Art Unit

3749

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 94-142 and 158-164 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 94-142 and 158-164 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. The following action is in response to the applicant's Amendment dated 4/20/2010, that was in response to the Office action dated 1/20/2010. Claims 94-142 and 158-164 are pending, claim 94 has been amended, while all other claims are presented as previously claimed. Claims 1-93 and 143-157 have been cancelled.

Response to Arguments

2. Applicant's arguments filed 4/20/2010 have been fully considered but they are not persuasive. The reasons for the applicant's remarks not being persuasive are given below.

3. The applicant respectfully submits that the prior art of reference does not show all the claimed features of the invention, specifically Sherman in view of Bettinzoli do not show chambers having three distribution channels in a "T" configuration with flame ports, or the injector for each distribution chamber. The examiner respectfully disagrees. Sherman does teach a gas burner with at least three distribution chamber with a "T" configuration with flame ports. The chambers are as much in a "T" configuration as that shown in the application. It is agreed that the overall shape is a clover leaf, however the fingers taper inward to form somewhat of a "T" configuration, wherein there are flame ports distribution along the shape of the "T". This is clearly seen in the figures of Sherman. Figure 8 specifically gives reference to the flame ports coming out of what is believed to be element (54). Bettinzoli is used to modify Sherman to show an arrangement wherein each distribution chamber has an injector to distribute gas into the

chamber, however only calls for the injector to be positioned to carry out a function, and not specifically located within the distribution chamber, at least with respect to claim 94. Bettinzoli teaches at least four venturis, and teaches that each are positioned to inject gas to each chamber, however it is clearly seen that not each chamber has an injector. For these reasons, the applicant's remarks are not persuasive, and the previous grounds of rejection will be maintained.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 94-111 and 114-142 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman [2320754], further in view of Bettinzoli [2006/0121402].

7. With respect to claim 94, Sherman discloses a gas burner including: a distributor means (46) having at least three distribution chambers (53) to distribute an air gas mixture around said distributor [page 2, right col, line 63-66], each distribution chamber

having at least three distribution channels having a substantially "T" configuration [see FIG 8]; each distribution channel including a plurality of flame ports (54) through which said gas mixture can pass and be ignited; wherein the burner has an internal aperture [see FIG 9], at least some of the flame ports being oriented towards the internal aperture [see FIG 8], each distribution chamber including at least one transversely projecting distribution channel which projects into the aperture [see FIG 8], the transversely projecting channel including flame ports adapted to direct combustion gasses into the aperture [see FIG 8], However does not teach the injectors as further claimed. Bettinzoli teaches a similar device having at least one injector (11) associated with each of said distribution chambers [see FIG 2] to deliver gas to the distribution channels [0033]; each of the injectors being positioned to inject gas into its associated distribution chamber via a an associated venturi system including an upwardly directed passage and a transition port and wherein the distribution channels enable gas flow in at least three directions away from said transition port and towards associated flame ports [see FIG 2]. In view of Bettinzoli, there is an injector for each chamber as claimed. It would have been obvious to have a venturi system for each chamber because the technique was known in the art, yielding the predictable result of distributing an effective amount of an air/gas mixture to reach a desired flame temperature.

8. With respect to claim 95, Sherman discloses a burner as claimed in claim 94, wherein two of the distribution channels of each distribution chamber extend circumferentially [see FIG 8].

9. With respect to claim 96, Sherman discloses burner as claimed in claim 94, wherein each venturi system includes an upright inward tapering section in fluid communication with a transverse expanding section via the transition port, the transverse expanding section being within the corresponding distribution chamber [see FIG 8].

10. With respect to claim 97, Sherman discloses a gas as burner as claimed in claim 94, wherein each distribution chamber includes a transversely extending distribution channel [see FIG 8].

11. With respect to claim 98, Sherman discloses a burner as claimed in claim 94, wherein said distributor means has a generally cylindrical outer surface [see FIG 1].

12. With respect to claim 99, Sherman discloses a burner as claimed in claim 94, wherein each distribution chamber has an inwardly extending distribution channel, the inwardly extending distribution channels including associated flame ports and being circumferentially equi-spaced [see FIG 9].

13. With respect to claim 100, Sherman discloses a burner as claimed in claim 94 wherein each distribution chamber includes at least one outwardly extending arm [see FIG 8].

14. With respect to claim 101, Sherman discloses a burner as claimed in claim 94, wherein the aperture has a clover leaf configuration [see FIG 8].

15. With respect to claim 102, Sherman discloses a burner as claimed in claim 94 wherein said distributor means is segmented, whereby each segment has its own distribution chamber [see FIG 8], however does not disclose each injector. Bettinzoli

teaches a similar device wherein each chamber has an injector (11) [see FIG 2, 0033].

In view of Bettinzoli, there is an injector for each chamber as claimed. It would have been obvious to have a venturi system for each chamber because the technique was known in the art, yielding the predictable result of distributing an effective amount of an air/gas mixture to reach a desired flame temperature.

16. With respect to claim 103, Sherman discloses a burner as claimed in claim 102 wherein said distributor means (46) is segmented by means of segment walls between respective segments [see FIG 8].

17. With respect to claim 104, Sherman discloses burner as claimed in claim 102 wherein said distributor means (46) is segmented by means of gas flow from said injectors [see FIG 8].

18. With respect to claim 105, Sherman discloses a burner as claimed in claim 102 wherein said segments form one of the following: a cross shape with an arcuate or circumferential cross bar; a T shape with a convex arcuate or circumferential cross bar; a T shape with a concave arcuate or circumferential cross bar [see FIG 8].

19. With respect to claim 106, Sherman discloses A burner as claimed in claim 94 wherein the air gas distribution channels of each distribution chamber form a T shape with an arcuate or circumferential cross bar [see FIG 8].

20. With respect to claim 107, Sherman discloses a burner as claimed in claim 102, wherein each segment includes four air gas distribution channels which form a cross shape with an arcuate or circumferential cross bar [see FIG 8].

21. With respect to claim 108, Sherman discloses a burner as claimed in claim 94, wherein said burner includes a cap (57) which is positioned on top of said distributor means [see FIG 9].
22. With respect to claim 109, Sherman discloses burner as claimed in claim 108, wherein each distribution chamber includes a venturi extension formed at least partially in the cap [see FIG 9].
23. With respect to claim 110, Sherman discloses a burner as claimed in claim 94, wherein said flame ports (54) are formed in one or more walls of said distributor means (46) [see FIG 9].
24. With respect to claim 111, Sherman discloses a burner as claimed in claim 108, wherein said flame ports are formed in the cap [see FIG 8].
25. With respect to claim 114, Sherman discloses a burner as claimed in claim 94, wherein said distributor means has at least one air entry port (55) per injector [see FIG 9].
26. With respect to claim 115, Sherman discloses a burner as claimed in claim 114, wherein each air entry port (55) is formed in a side wall of said distributor means [see FIG 8].
27. With respect to claim 116, Sherman discloses a burner as claimed in claim 115, wherein said air entry ports have a larger cross sectional area at intermediate regions by comparison to side regions of said air entry ports [see FIG 9].

28. With respect to claim 117, Sherman discloses a burner as claimed in claim 115, wherein each air entry port is positioned in the wall of said distributor means so as to be located proximate said injector [see FIG 9].

29. With respect to claim 118, Sherman discloses a burner as claimed in claim 117, wherein each said injector is shielded by a portion of a wall of said distributor means to prevent air passing in through said air entry port from disturbing the operation of said injector [see FIG 9].

30. With respect to claim 119, Sherman discloses a burner as claimed in claim 115, wherein the distributor includes at least three inwardly extending arms, and wherein said air entry ports are located between respective arms of said distributor means, and wherein respective injectors are located so that they are aligned with the direction of said arm [see FIG 8].

31. With respect to claim 120, Sherman discloses a burner as claimed in claim 94, wherein the distributor includes at least three inwardly extending arms, and wherein said burner includes a trivet which is aligned with said arms, so as to overlie said arms [see FIG 8].

32. With respect to claim 121, Sherman discloses a burner as claimed in claim 94, wherein the distributor includes at least three inwardly extending arms, and wherein said arms have a flame port arrangement whereby the axis of said flame ports on a respective arm is generally at an acute angle to the direction of a respective arm [see FIG 8].

33. With respect to claim 122, Sherman discloses a burner as claimed in claim 94, however does not disclose the distributor as further claimed.

34. With respect to claim 123, Sherman discloses wherein said distributor means is mounted on a manifold including a gas inlet which communicates with a cavity in said manifold, each of said injectors being in fluid communication with the cavity to receive gas supply from the cavity [see FIG 8].

35. With respect to claim 124, Sherman discloses a burner as claimed in claim 123, wherein a wall of said cavity is shaped such that the height of said cavity at the outer periphery is of a height greater than at the centre of said cavity [see FIG 8].

36. With respect to claim 125, Sherman discloses a burner as claimed in claim 123, wherein said manifold cavity has its top surface concave in shape [see FIG 9].

37. With respect to claim 126, Sherman discloses a burner as claimed claim 94, wherein said distributor means has an internal aperture such that the distributor means has an internal and an external perimeter, with inwardly directed ports in said internal perimeter and outwardly directed ports in its external perimeter [see FIG 8].

38. With respect to claim 127, Sherman discloses a burner as claimed in claim 109, wherein each venturi extension is oriented so as to be generally horizontal [see FIG 8].

39. With respect to claim 128, Sherman discloses a gas burner as claimed in claim 94, comprising one distributor means (46) having at least three discrete distribution chambers (53) therein, each chamber having communication with flame ports (54), each of said chambers having a transversely extending channel [see FIG 8], which projects into an inner aperture of said burner, whereby between the ends of respective inwardly

extending channels there is provided an unobstructed space [see FIG 9], however does not disclose the venturi system as further claimed. Bettinzoli teaches a similar device including a venturi system (11) to supply an air gas mixture thereto; said burner having a single manifold to conduct gas to respective injectors for each venturi system from a single gas supply connection to said manifold [0035]. In view of Bettinzoli, there is a venturi for each chamber and a single manifold to supply each system. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide a single manifold for each injector because the technique was known in the art, yielding the predictable result of minimizing burner construction and difficulty of manufacturing.

40. With respect to claim 129, Sherman discloses a gas burner as claimed in claim 128, wherein each transversely extending channel includes at least two sides which are generally parallel [see FIG 8]

41. With respect to claim 130, Sherman discloses a gas burner as claimed in claim 128, wherein each chamber also includes two oppositely extending circumferential or arcuate channels [see FIG 8].

42. With respect to claim 131, Sherman discloses a gas burner as claimed in claim 128, wherein said chamber also includes an outwardly projecting channel [see FIG 8].

43. With respect to claim 132, Sherman discloses a gas burner as claimed in claim 131, wherein said burner includes a cap (57).

44. With respect to claim 133, Sherman discloses a gas burner as claimed in claim 132, wherein the distributor means or said cap includes a multiplicity of said flame ports [see FIG 8].

45. With respect to claim 134, Sherman discloses a gas burner as claimed in claim 133, wherein said flame ports are formed by a combination of formations located on said distributor means and said cap [see FIG 8].

46. With respect to claim 135, Sherman discloses a gas burner as claimed in claim 128, wherein each distribution chamber includes at least three venturi extensions which each define two peripheral channels and a transverse channel to deliver air gas mixture to flame ports [see FIG 8].

47. With respect to claim 136, Sherman discloses a gas burner as claimed in claim 132, wherein said cap includes at least three venturi extensions which extends into said chamber to define a radial channel and two peripheral channels to deliver air gas mixture to flame ports [see FIG 8].

48. With respect to claim 137, Sherman discloses a gas burner as claimed in claim 128, however does not disclose each venturi system as further claimed. Bettinzoli teaches a similar device wherein each said venturi system includes a vertical passage which opens into at least one generally horizontal venturi extension which extends away from said vertical passage in the direction of each distribution channel of said chamber [see FIG 2, 0033]. In view of Bettinzoli, there is an injector for each chamber as claimed. It would have been obvious to have a venturi system for each chamber because the

technique was known in the art, yielding the predictable result of distributing an effective amount of an air/gas mixture to reach a desired flame temperature.

49. With respect to claim 138, Sherman discloses a gas burner as claimed in claim 132, wherein each generally horizontal venturi extension is formed in said distributor means and/or in an underside of the cap [see FIG 8].

50. With respect to claim 139, Sherman discloses a burner as claimed in claims 128, wherein said distributor means is an assembly of separate or discrete segments which are assembled or otherwise joined together [see FIG 8].

51. With respect to claim 140, Sherman discloses a burner as claimed in claim 139, wherein said separate or discrete segments include interlocking formations thereon so that adjacent burner segments can be assembled together [see FIG 9].

52. With respect to claim 141, Sherman discloses a burner as claimed in claim 139, wherein said separate or discrete segments are held together as an assembly by means of an interaction with a burner cap [see FIG 9].

53. With respect to claim 142, Sherman discloses a burner as claimed in claim 139, wherein a circumferential fixing means assists in holding or holds said separate or discrete segments together as an assembly to form a distributor [see FIG 9].

54. Claims 112, 113 and 158-164 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman [754], in view of Bettinzoli [402], further in view of Haynes et al [6439882].

55. With respect to claim 112, Sherman discloses a burner as claimed in claim 111, however does not disclose the occluding structures as further claimed.

56. With respect to claim 113, Sherman discloses a burner as claimed in claim 112, however does not disclose the occluding structures as further claimed.

57. With regard to claims 112 and 113, Sherman discloses a burner however Haynes teaches a device wherein each distribution channel has one or more occluding structures associated therewith for directing and or baffling said air gas mixture in its flow from said transition port to said flame ports and wherein said occluding structures comprise a wall or ridge like formation extending away from the transition port [see FIG 2, col 3, line 56-67, col 4, line 1-22]. In view of Haynes, the ridge (64) acts as a baffle. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide occluding structures as claimed because the technique was known in the art, yielding the predictable result of controlling the amount of the mixture to each channel.

58. With respect to claim 158, Sherman discloses a gas burner including a distributor means (46) having at least three chambers (53) to distribute an air gas mixture around said distributor means [page 2, right col, line 63-66], said burner including a plurality of flame ports (54) through which said gas mixture can pass and be ignited; a venturi being formed in part by said converging passage and said transition port with a final part of said venturi being formed by at least one venturi extension which acts upon a generally horizontal flow of said air gas mixture flowing from said transition port [see FIG 8], however does not disclose the injector or occluding structures as further claimed. Bettinzoli teaches a similar burner wherein at least one injector (11) associated with each chamber, each injector being positioned to inject gas into its associated

chamber via a respective vertically directed converging passage terminating with an transition port which has communication with said chamber [0033]. In view of Bettinzoli, there is an injector for each chamber as claimed. It would have been obvious to have a venturi system for each chamber because the technique was known in the art, yielding the predictable result of distributing an effective amount of an air/gas mixture to reach a desired flame temperature. Haynes teaches a similar device wherein said transition port having at or near its rim two or more occluding structures (64) associated therewith for directing and or baffling said air gas mixture in its flow from said transition port to said flame ports [see FIG 2, col 3, line 56-67, col 4, line 1-22]. In view of Haynes, the ridge (64) acts as a baffle. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide occluding structures as claimed because the technique was known in the art, yielding the predictable result of controlling the amount of the mixture to each channel.

59. With respect to claim 159, Sherman discloses a burner as claimed in claim 158, however does not disclose the occluding structure as further claimed.

60. With respect to claim 160, Sherman discloses a burner as claimed in claim 158, however does not disclose the occluding structure as further claimed.

61. With respect to claim 161, Sherman discloses a burner as claimed in claim 158, however does not disclose the occluding structure as further claimed.

62. With regard to claims 159-161, Sherman discloses the burner however Haynes teaches a similar device wherein said occluding structures comprise a wall or ridge like formation extending away from said protrusion and or said protrusion extensions [col 3,

line 56-67, col 4, line 1-22] and wherein said occluding structures have a castellated appearance [see FIG 1] and wherein said occluding structures are formed on said distributor means or in a cap associated with said distributor means or by a combination of both [see FIG 3] In view of Haynes, the ridge (64) acts as a baffle. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide occluding structures as claimed because the technique was known in the art, yielding the predictable result of controlling the amount of the mixture to each channel.

63. With respect to claim 162, Sherman discloses a burner as claimed in claim 158, wherein said flame ports are formed on said distributor means or in a cap associated with said distributor means or by a combination of both [see FIG 8].

64. With respect to claim 163, Sherman discloses a burner as claimed in claim 158, wherein extending away from said transition port there are at least two venturi extensions [see FIG 8].

65. With respect to claim 164, Sherman discloses a burner as claimed in claim 158 however does not disclose the occlusion structures as claimed. Haynes teaches a similar device wherein said occlusion structures are located near to the edges of said venturi extensions [see FIG 1, col 3, line 56-67, col 4, line 1-22]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide occluding structures as claimed because the technique was known in the art, yielding the predictable result of controlling the amount of the mixture to each channel.

Conclusion

66. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AVINASH SAVANI whose telephone number is (571)270-3762. The examiner can normally be reached on Monday- Friday, alternate Fridays off, 7:30-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Avinash Savani/
Examiner, Art Unit 3749

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6/29/2010

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